48. (Amended) The method of claim 47 in which the composition comprises killed whole *E. coli* K12 cells containing rough complete-core LPS antigen.

49. (Amended) The method of claim 44 in which the composition comprises a cocktail of killed Ra chemotype bacterial cells classified in at least three of the following classifications of Gram-negative bacteria: *E. coli* K12, *E. coli* R1, *Bacteroides fragilis*, *Pseudomonas aeruginosa.*

52. (Amended) The method of claim 103 in which the Ra LPS conjugate is *E. coli* K12 Ra LPS conjugate.

53. (Amended) The method of claim 103 in which the composition comprises a cocktail of Ra LPS antigens from multiple strains of gram-negative bacteria, said antigens being conjugated to a protein.

54. (Amended) The method of claim 53 in which the composition comprises conjugates of Ra LPSs from at least three strains of Gram-negative bacteria, each of said three strains being classified in a different one of the following classifications: *E. coli* K12, *E. coli* R1, *Bacteroides* fragilis, *Pseudomonas aeruginosa.*

55. (Amended) The method of claim 44 in which the composition comprises Ra LPS incorporated in a liposome.

57. (Amended) The method of claim 55 in which the composition comprises a cocktail of Ra LPSs from multiple species of Gram-negative bacteria incorporated in liposomes.

58. (Amended) The method of claim 57 in which the cocktail comprises Ra LPSs from at least three strains of Gram-negative bacteria, each of said strains being classified in a different one of the following classifications: *E. coli* K12, *E. coli* R1, *Bacteroides fragilis*, and *Pseudomonas aeruginosa.*

59. (Amended) The method of claim 44 in which one of said bacterial strains is classified as *E. coli* K12.

B5

61. (Amended) The method of claim 59 in which the animal is a mammal.

B6 C3

64. (Amended) The method of claim 59 in which the other of said bacterial strains is classified as *E. coli* or *Salmonella*.

Sub C4

66. (Amended) The method of claim 59 in which the composition comprises complete-core, rough, LPS antigen from a third Gram-negative bacterial strain different from the first and from the second Gram-negative bacterial strains.

B7

67. (Amended) The method of claim 66 in which the composition comprises complete-core, rough, LPS antigen from a fourth Gram-negative bacterial strain different from each of the first, the second, and the third Gram-negative bacterial strains.

68. (Amended) The method of claim 59 in which the other of said Gram-negative bacterial strains is *E. coli* R1.

69. (Amended) The method of claim 59 in which the other of said Gram-negative bacterial strains is a *Salmonella*.

72. (Amended) The method of claim 64 or claim 69 in which the *Salmonella* strain is *Salmonella minnesota* .

B8

73. (Amended) The method of claim 67 in which complete core antigen from each of the four bacterial strains is present in generally equal amounts by weight.

B9

75. (Amended) The method of claim 59 in which the antigens cause the patient to produce an antibody that binds to an epitope in the core region of the LPS of at least one Gram-negative bacterial strain whose LPS is not part of the composition.

C5
B10

78. (Amended) The method of claim 107 in which the ratio (weight:weight) of lipid in the liposome to the LPS antigens is between 1:1 and 5000:1.

79. (Amended) The method of claim 107 in which the ratio (weight:weight) is between 10:1 and 1000:1.

sub C5

80. (Amended) The method of claim 107 in which the liposome comprises a component selected from the group consisting of: phospholipid, cholesterol, positively charged compounds, negatively charged compounds, and amphipathic compounds.

81. (Amended) The method of claim 107 in which the liposome is a multilamellar type liposome (MLV).

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B

82. (Amended) The method of claim 107 in which LPS in the acid salt form is incorporated into the liposome.

83. (Amended) The method of claim 107 in which the liposome is a small or large unilamellar liposome (SUVs and LUVs).

84. (Amended) The method of claim 44 in which the composition is administered intramuscularly, intravenously, subcutaneously, intraperitonealy, via the respiratory tract, or via the gastrointestinal tract.

85. (Amended) The method of claim 44 in which the dose of antigen is over 0.01 ng per kilogram of patient body weight.

88. (Amended) The method of claim 44 in which the composition is administered in multiple doses, the first of which is administered at least 2 days prior to potential endotoxin exposure.

89. (Amended) The method of claim 59 in which the antigen is present in a killed bacterial cells.

B12

90. (Amended) The method of claim 44 in which the antigen is separated from bacterial cells.

91. (Amended) The method of claim 44 in which the antigen is chemically detoxified.

92. (Amended) The method of claim 44 or claim 90 in which the bacterium is genetically engineered.

93. The method of claim 44 in which the composition further comprises an adjuvant.

--101. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigens of *E. coli*, of *Pseudomonas;* and of *Bacteroides.*--

B13

--102. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising a cocktail of killed Ra chemotype whole-cell mutants of each of the following classifications of gram-negative bacteria: *E. coli* K12, *E. coli* R1, *Bacteroides fragilis, Pseudomonas aeruginosa.*--

--103. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a

composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of a gram negative bacterial strain, said antigen being conjugated to protein, wherein said antigen is purified detoxified Ra LPS.--

--104. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of *E. coli* K12 and rough, complete-core lipopolysaccharide (LPS) antigen of a *Bacteroides* bacterial strain.--

--105. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of at least one gram negative bacterium, said composition comprising:

rough, complete-core lipopolysaccharide (LPS) antigen of *E. coli* K12;

rough, complete-core lipopolysaccharide (LPS) antigen of a *Klebsiella* bacteria;

rough, complete-core lipopolysaccharide (LPS) antigen from a *Pseudomonad*.--

--106 The method of claim 105 in which the composition further comprises rough, complete-core lipopolysaccharide (LPS) antigen of a *Bacteroides*.--

--107. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of at least one gram negative bacterium, the composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of *E. coli* K12, and the antigen causing the patient to produce an antibody that binds to an epitope in the core region of the LPS of at least one Gram-negative bacterial strain whose LPS is not part of the composition, the antigen being present in a liposome.--

--108. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of at least one gram negative bacterium, the composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of *E. coli* K12, in which the antigen is produced by one or more of the following methods: a) it is separated ~~from~~ the bacterium; b) it is chemically detoxified; c) it is genetically engineered.--

--109. A method of reducing adverse effects of endotoxin in a warm-blooded animal, which comprises administering to the warm-blooded animal an effective amount of a composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of at least one gram negative bacterium, the composition comprising rough, complete-core lipopolysaccharide (LPS) antigen of *E. coli* K12, and alum as an adjuvant.--

--110. The method of claim 64 in which the other of said bacterial strains is classified as *E. coli*.—

--111. The method of claim 44 of 64 in which the bacterial strains are classified as Ra rough mutant strains.--